

ABSTRACT OF THE DISCLOSURE

Disclosed are methods and apparatus for performing network address translation (NAT) in a fully connected mesh with NAT virtual interface (NVI). In general terms, mechanisms (*e.g.*, within a combination router/NAT device) are provided for translating network addresses of traffic going between two private domains or realms. These mechanisms may also be used to translate traffic going between a private and public domain. When a particular private address is translated into a public address, a binding is formed between the pre-translation address, the post-translation address, and the interface associated with the private or public address (*e.g.*, an interface of the router/NAT device). Since bindings of different interfaces are tracked, a private address and its associated particular interface may be associated with a particular public address. Accordingly, the translation mechanisms of the present invention may be applied to two duplicate private addresses from two different private domains because the two identical private addresses are distinguished based on their different interfaces.